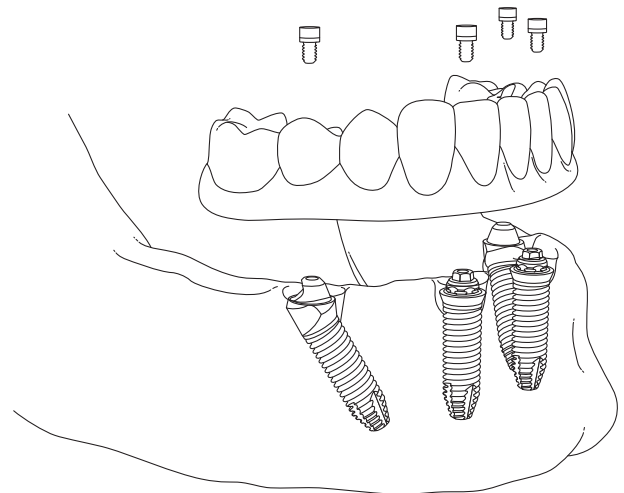




# All-on-4™

Concept manual for conventional  
and guided surgery



**Original protocol for All-on-4 concept**

All-on-4 is a rehabilitation concept that maximizes the use of available bone. The surgical and prosthetic procedures follow a strict protocol including the products to be used. The success of the All-on-4 technique is due to these specific protocols and products, namely NobelSpeedy implants, which have been used with 10 years of follow-up. For the long term follow-up studies supporting the result and the success rate of the All-on-4 concept, please visit [www.nobelbiocare.com](http://www.nobelbiocare.com) or ask your Nobel Biocare representative for references.

The All-on-4 and the All-on-4 with NobelGuide clinical solutions were developed together with Paulo Malo, DDS, PhD, at MALO CLINIC.

**Note:** In order to improve readability, Nobel Biocare does not use <sup>™</sup> or <sup>®</sup> in the running text. By doing so, however, Nobel Biocare does not waive any right to the trademark or registered mark and nothing herein shall be construed to the contrary.

**Disclaimer:** Some products may not be regulatory cleared/released for sale in all markets. Please contact the local Nobel Biocare sales office for current product assortment and availability.

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# A proven and successful concept for edentulous patients.

## Only four implants needed

The All-on-4 treatment concept, with its use of straight and angled Multi-unit Abutments, was developed to provide edentulous patients with an immediately loaded full-arch restoration on only four implants – two placed vertically in the anterior, two placed at an angle of up to 45° in the posterior region.

By tilting the two posterior implants, the bone-to-implant contact is enhanced, providing optimal bone support even with minimum bone volume. Additionally, tilting of implants in the maxilla allows for improved anchorage in better quality anterior bone and bicortical anchorage in the cortical bone of the sinus wall and the nasal fossa.

Tilting of the posterior implants also helps avoid vital structures, such as the mandibular nerve or the maxillary sinus, and results in a better distribution of implants along the alveolar crest, which optimizes load distribution and allows for a final prosthesis with up to 12 teeth.

## Multi-unit Abutments

Nobel Biocare offers straight, as well as 17° and 30° angled Multi-unit Abutments for all Nobel Biocare implants and a selection of other major implant systems. The abutments are available with various collar heights to match the thickness of the soft tissue.

## Fixed temporary prosthetic solutions

With All-on-4, patients benefit from an immediate implant-supported all-acrylic restoration, as a provisional prosthesis is screwed onto the implants right after surgery.

## Final restorative solutions

Final solutions include both fixed and fixed-removable prostheses:

- Fixed solutions include NobelProcera Implant Bridge with acrylic veneering, or individual NobelProcera crowns cemented to the bridge framework.
- Fixed-removable solutions include acrylic prosthesis on a NobelProcera Implant Bar Overdenture, attached by means of a variety of attachment systems.

NobelProcera Implant Bridge and Implant Bar Overdenture are milled from a biocompatible titanium monobloc using state-of-the-art CAD/CAM technology, resulting in consistent precision of fit, individualized design and optimal esthetics.

## Guided surgery

All-on-4 can be planned and performed using the NobelGuide treatment concept, ensuring accurate diagnostics, planning and implant placement.

## All-on-4 step by step



Insertion of implants



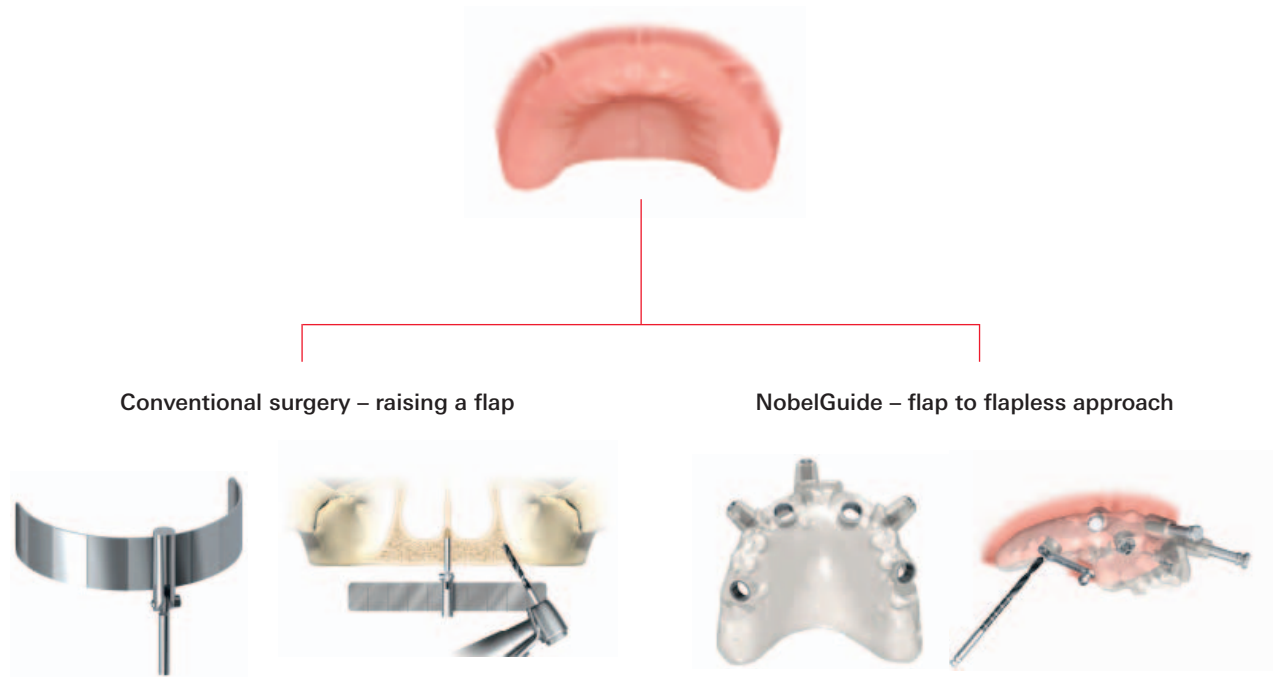
Securing of Multi-unit Abutments



Securing of provisional prosthesis with prosthetic screws

# Conventional versus guided surgery.

The All-on-4 treatment concept can be performed in two ways:



**All-on-4** using conventional flap procedure with traditional planning and a standardized All-on-4 Guide for predictable and optimal positioning of the implants.

#### Available implant systems

- All Nobel Biocare two-piece implant systems
- All-on-4 was developed with NobelSpeedy implants with external hex connection, which is the most versatile connection in terms of surgery and prosthetics

**All-on-4 with NobelGuide** using 3D diagnostics and treatment planning and a custom-designed surgical template to correctly drill and position the implants.

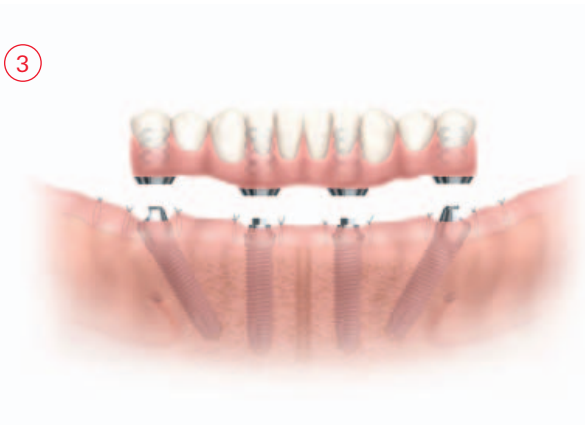
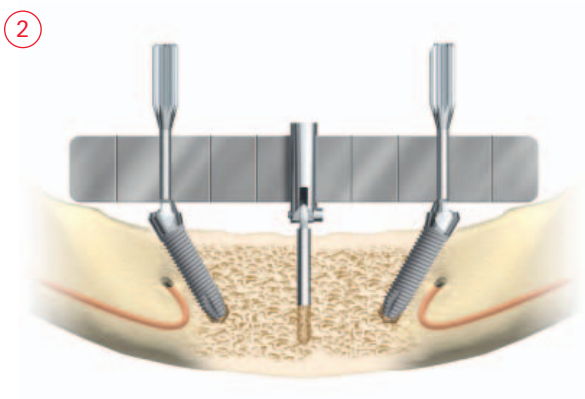
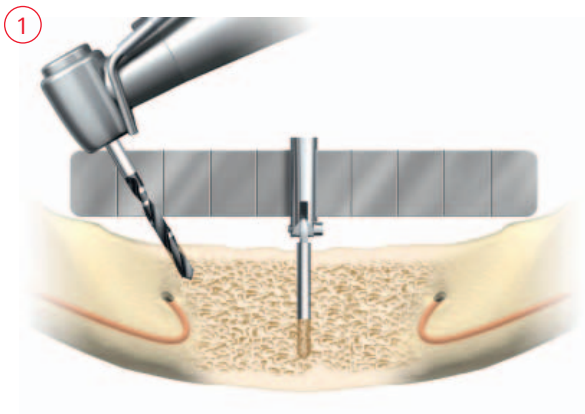
#### Available implant systems

- NobelSpeedy Groovy
- NobelSpeedy Replace
- Brånemark System Mk III Groovy
- NobelReplace Straight Groovy
- NobelReplace Tapered Groovy
- NobelActive\*

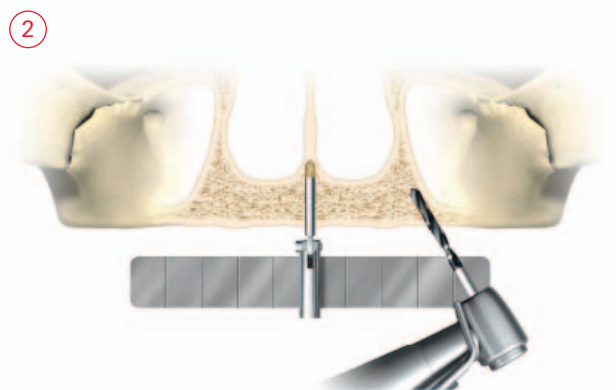
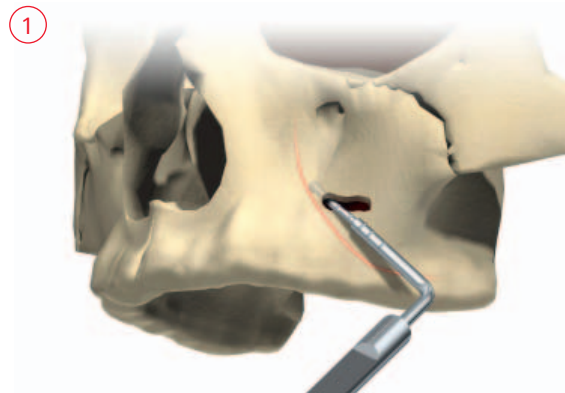
\* Non-engaging 30° Multi-unit Abutments are not available for NobelActive.

# Quick guide conventional surgery.

Mandible



Maxilla



# Treatment planning.

The All-on-4 clinical solution was developed to maximize the use of available bone and to allow for immediate function. When planning conventional All-on-4 using a flap technique, consider the following.

## General considerations

- Ability to achieve primary implant stability:
  - Implants should withstand a minimum tightening torque of 35 Ncm.
  - If this tightening torque is not achieved, a conventional healing phase is recommended prior to delivery of the provisional or final restoration.
- No severe parafunctions.
- Indicated for edentulous maxilla with a minimum bone width of 5mm and a minimum bone height of 10mm from canine to canine.
- Indicated for edentulous mandible with a minimum bone width of 5mm and a minimum bone height of 8mm inbetween the mental foramina.
- To reduce the cantilevers, tilt the posterior implants to a maximum of 45°.
- If the angulation is 30° or more, it is necessary to splint the tilted implants.
- For tilted posterior implants, plan the distal screw access holes to be located at the occlusal plane of the first molar, second pre-molar, or first pre-molar.
- The All-on-4 treatment does not require a wider opening of the mouth than a treatment with straight implants due to the angulation of the posterior implants.
- If there are extraction sites, clean them thoroughly. It is advisable to place implants between extraction sockets.

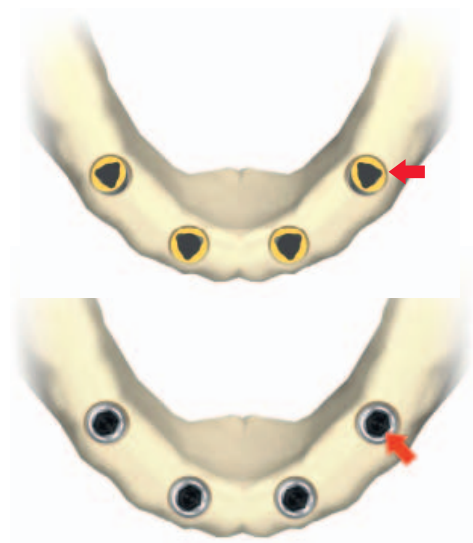
## Specific considerations – implants

- If possible, the posterior implants should be  $\varnothing$  4.0 or  $\varnothing$  4.3mm.
- When placing posterior implants with:
  - internal tri-channel connection: make sure that one of the tri-channel lobes is pointing distally or slightly buccally.
  - internal conical connection: make sure that one of the flat sides of the hexagon is parallel to the buccal side.

**Tip:** The implant drivers have markings to facilitate proper orientation of the implants.

## Notes:

- For internal tri-channel and external hex connection, the 30° Multi-unit Abutment is only available for RP implants. The 17° Multi-unit Abutment is available for NP and RP implants.
- For internal conical connection, the 17° and 30° Multi-unit Abutments are available for NP and RP implants.



## Specific considerations – prosthetics

- No extensions over one tooth on each side for an immediate all-acrylic bridge, which should have a maximum of 12 teeth.
- If the patient's removable prosthesis is in good condition, it may be used to fabricate the immediate all-acrylic bridge.
- For proper esthetics and function, the final bridge should have 12 teeth and a supporting metal framework.

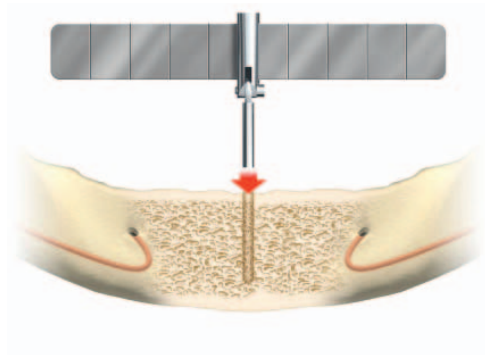
**Note:** For a full description of implant placement, prosthetic procedures, and all instruments needed, please refer to the respective procedures manuals (for current versions see section Resources on [www.nobelbiocare.com/dental](http://www.nobelbiocare.com/dental)).

# Clinical procedure for edentulous mandible.

The images show immediate function with an all-acrylic bridge and NobelSpeedy Groovy RP implants.

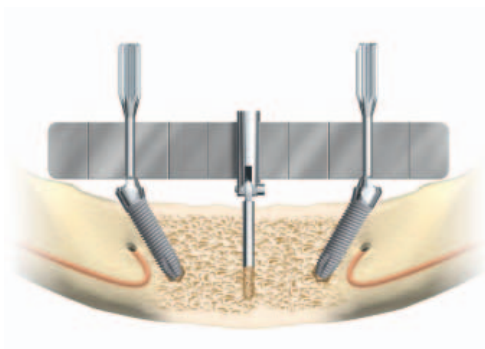
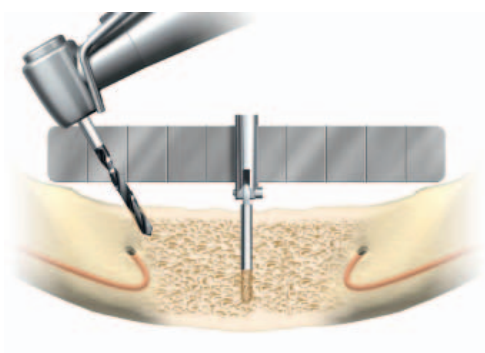
## 1 Position All-on-4 Guide

- After making an incision for flap elevation, make an osteotomy of approximately 10 mm in the midline using a  $\varnothing$  2 mm Twist Drill.
- Place the All-on-4 Guide in the osteotomy.



## 2 Prepare posterior site

- Drill to appropriate depth using a  $\varnothing$  2 mm Twist Drill tilted to a maximum angle of 45°.
- Check for correct angulation with the All-on-4 Guide.
- Prepare the site according to the density of the bone. Insert the implant.
- For immediate function, the implants should withstand a final tightening torque between 35 and 45 Ncm.
- If indicated, use a Bone Mill together with a Bone Mill Guide to remove bone that could hinder correct seating of the abutment.
- Place a 30° Multi-unit Abutment. Tighten to 15 Ncm using Unigrip Screwdriver Machine and Manual Torque Wrench Prosthetic.
- Perform the same procedure for the opposite posterior site.



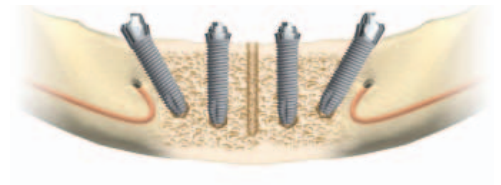
**Note:** It is important to identify the mental foramen and exiting inferior dental nerve. The final position of the implant should be in front of the foramen, avoiding the nerve loop.



---

### 3 Prepare anterior site

- Prepare two anterior sites, as far apart from each other as possible, allowing for a safe distance from the apex of the posterior implants.
- If indicated use a Bone Mill together with a Bone Mill Guide to remove bone that could hinder correct seating of the abutment.
- Place straight or 17° Multi-unit Abutments and allow for proper emergence of the prosthetic screw.
- Tighten 17° Multi-unit Abutments to 15 Ncm using Unigrip Screwdriver Machine and Manual Torque Wrench Prosthetic.
- Tighten straight Multi-unit Abutments to 35 Ncm using Screwdriver Machine Multi-unit and Manual Torque Wrench Prosthetic.

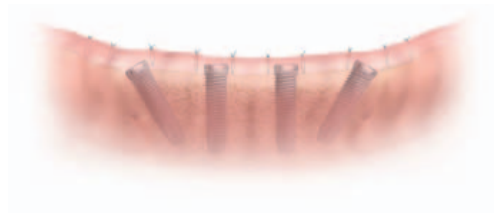



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#### Option: delayed loading

If the required tightening torque for immediate function (minimum 35 Ncm) cannot be achieved or the treatment of choice is a delayed loading protocol, a conventional healing phase is recommended prior to delivery of a provisional or final restoration.

- Place cover screws on all four implants and suture back the flap.
- Wait with further steps until osseointegration has taken place.

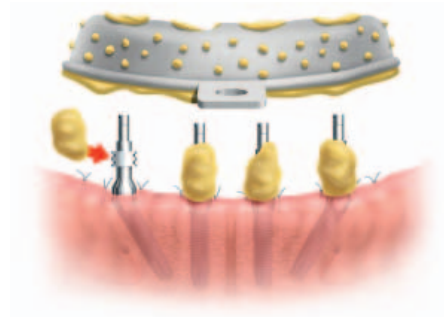


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#### 4 Take an impression

- After suturing, connect the Multi-unit Impression Copings Open Tray to the Multi-unit Abutments.
- Take an impression using silicone soft putty material and a customized open tray.

**Tip:** To avoid impression material entering into the tissue, always use a putty soft addition silicone. The less fluid the material is, the less it can penetrate into the tissue.



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#### 5 Laboratory procedure for provisional bridge

A model and a provisional restoration are made at the dental laboratory. For more information, see the step-by-step laboratory procedure.



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#### 6 Connect provisional bridge

- Place the all-acrylic bridge on the abutments.
- Tighten the prosthetic screws to 15Ncm using Unigrip Screwdriver Machine and Manual Torque Wrench Prosthetic.
- Block out screw access and fill holes with suitable material.
- Check the occlusion.



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#### 7 Final restoration

After a sufficient healing period, follow established prosthetic procedures for the final restoration, preferably a NobelProcera Implant Bridge.

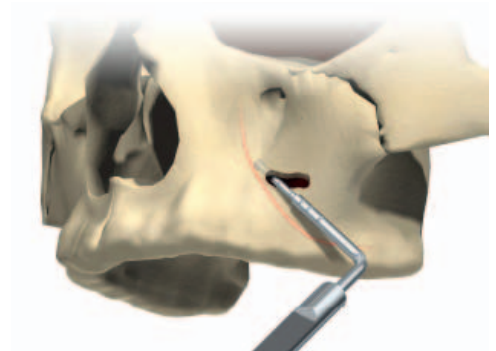
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# Clinical procedure for edentulous maxilla.

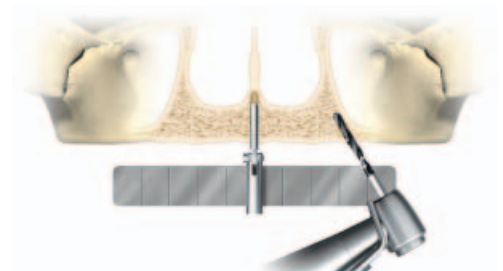
**Note:** When performing the All-on-4 treatment in the maxilla, add the following steps for the posterior sites in addition to those for the posterior sites in the mandible.

## Prepare posterior site

- Identify the anterior wall of the maxillary sinus by drilling a small opening on the lateral wall of the maxilla where the anterior wall is expected to be.
- Explore the wall with a probe and extend the window if necessary.
- Mark the position of the anterior wall with the surgical marker.
- Start the site preparation as posterior as possible, allowing approximately 4 mm from the sinus wall.



- Incline the drill (not more than 45°) as far back as possible to minimize the cantilever.

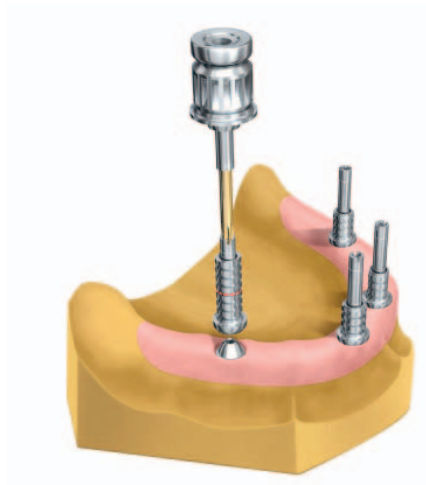


# Laboratory procedure.

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## **Fabricate the all-acrylic bridge**

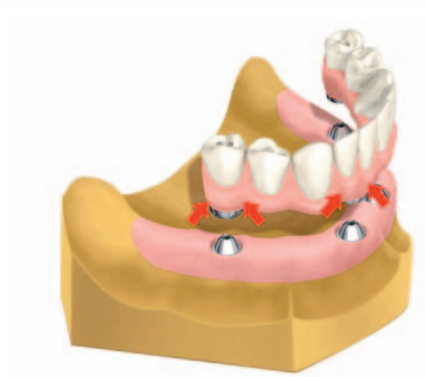
- Fabricate a soft-tissue model using Abutment Replicas Multi-unit.
- Use guide pins (available in 10 and 20 mm lengths) or lab screws to place Temporary Copings Multi-unit on the replicas. It is preferable to use temporary copings in titanium.
- Adjust the copings if needed.



- Fabricate an all-acrylic bridge using a high-density acrylic.
- Reinforce the weak points of the prosthesis around the cylinders with more acrylic.

## **Notes:**

- If possible, a tooth set-up should be tried in the patient's mouth before finalizing the bridge.
- The bridge can also be made by converting the existing denture into a bridge.



# Optimal implant placement and prosthetic outcome.

NobelGuide is the ideal treatment concept also for All-on-4, because it optimizes implant placement by means of 3D diagnostics, digital treatment planning and guided surgery with a custom-designed surgical template. It supports minimally invasive flapless techniques as well as surgical access through mini-flaps and full flaps.

## Accurate diagnostics and prosthetic-driven planning

Based on 3D (CB)CT diagnostic imaging of the patient and a radiographic guide, virtual implant placement following prosthetic-driven planning can be performed within the NobelClinician Software\*, ensuring high diagnostic accuracy and safe and predictable implant placement.

With the combination of the 3D radiological dataset and 3D models of bone and radiographic guide, dental professionals can evaluate bone quantity and quality, mark vital anatomical structures such as the alveolar nerve and the maxillary sinus, and position the implants according to prosthetic needs. Through controlled and customizable angulation of the dental reslice planes in the split-screen view of the software, the tilted posterior implants are also ideally positioned.

## Safe and predictable implant placement

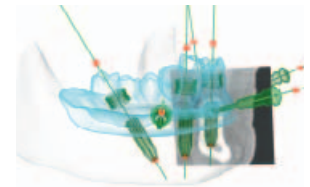
After planning the case in NobelClinician Software, a ready-to-use custom-designed surgical template, together with all necessary implants, abutments and surgical instruments, can be ordered online in a single order. The surgical template enables guided implant site preparation and precise and efficient implant insertion, which minimizes patient pain and swelling.

## Prefabrication of provisional prosthesis before surgery

The surgical template can be used to create a stone model with implant replicas already in place before surgery. This enables the dental technician to produce the provisional prosthesis and the Multi-unit Abutment placement jig in advance, so that the clinician can finalize the prosthesis and mount it on the implants right after surgery.



Existing prosthesis can be modified directly into a radiographic guide



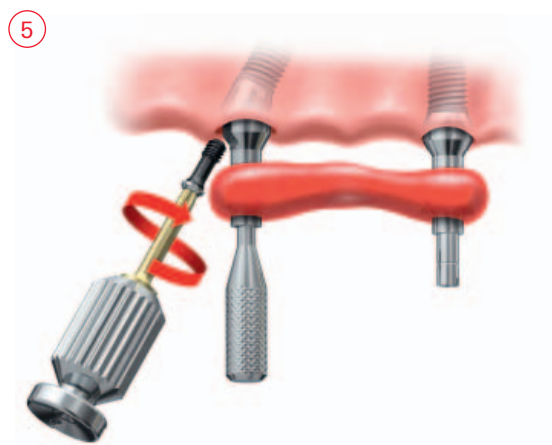
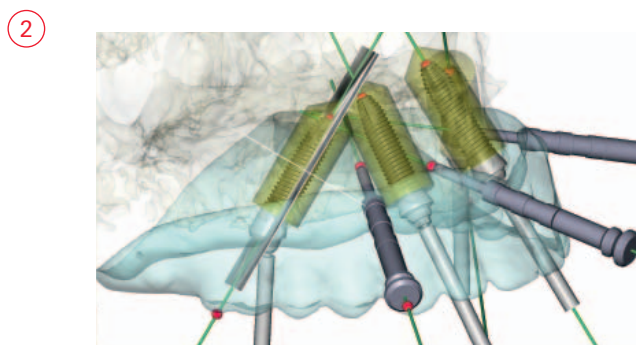
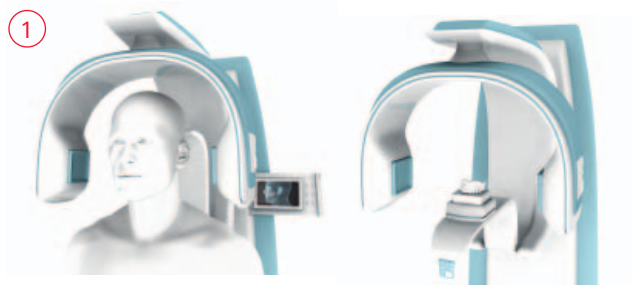
Digital prosthetic-driven planning in NobelClinician Software



Guided implant insertion with ready-to-use surgical template

\* The new version of the NobelGuide Software is called NobelClinician.

# Quick guide guided surgery.



# Treatment planning.

The All-on-4 clinical solution was developed to maximize the use of available bone and to allow for immediate function. When planning All-on-4 with NobelGuide, consider the following.

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## General considerations

- For NobelGuide computer-based planning, a CT scan using a radiographic guide is required. Please refer to the NobelGuide concept manual for details.
- Ability to achieve primary implant stability:
  - Implants should withstand the minimum tightening torque of 35Ncm to allow for immediate function (perform final torque measurement without surgical template).
  - If this tightening torque is not achieved, a conventional healing phase is recommended prior to delivery of the provisional or final restoration.
- No severe parafunctions.
- Indicated for totally edentulous maxilla with a minimum bone width of 5 mm and a minimum bone height of 10mm from canine to canine.
- Indicated for totally edentulous mandible with a minimum bone width of 5 mm and a minimum bone height of 8 mm inbetween the mental foramina.
- To reduce the cantilevers, tilt the posterior implants to a maximum of 45°.
- If the angulation is 30° or more, it is necessary to splint the tilted implants.
- For tilted posterior implants, plan the distal screw-access holes to be located at the occlusal plane of the first molar, second premolar, or first premolar.
- The All-on-4 treatment does not require a wider opening of the mouth than a treatment with straight implants due to the angulation of the posterior implants. However, as with all NobelGuide treatments, it is important to compensate for the extra height needed for NobelGuide components and instruments.

## Smile line consideration

When using All-on-4 and NobelGuide, pay special attention to the transition zone and smile line when planning the case. If the smile line does not hide the transition zone, pre-prosthetic surgery reducing the alveolar bone needs to be taken into consideration.

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## Specific considerations – implants

- If possible, the posterior implants should be Ø 4.0 or Ø 4.3mm.

**Note:** The 30° Multi-unit Abutment Non-Engaging is only available for RP implants with internal tri-channel and external hex connection. It is not available for implants with internal conical connection.

---

## Specific considerations – prosthetics

- No extensions over one tooth on each side for an immediate all-acrylic bridge, which should have a maximum of 12 teeth.
- If the patient's removable prosthesis is in good condition, it may be used to fabricate the immediate all-acrylic bridge.
- For proper esthetics and function, the final bridge should have 12 teeth and a supporting metal framework.

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**Note:** For a full description of implant placement, prosthetic procedures, and all instruments needed, please refer to the respective procedures manuals (for current versions see section Resources on [www.nobelbiocare.com/dental](http://www.nobelbiocare.com/dental)).

**Checklist prior to surgery**

- Correct implants, components and instruments for guided surgery
- Printed planning report from NobelClinician Software
- Surgical template manufactured by Nobel Biocare (check that it corresponds to the template designed in NobelClinician Software. Also verify precision of fit on master model and patient prior to surgery)
- Surgical index manufactured by dental laboratory
- Prosthetic components
- Temporary restoration
- Disinfection agent for surgical template



- The jig construction for placing 30° Multi-unit Abutments Non-Engaging, which includes:
  1. Impression Coping Open Tray Multi-unit
  2. Guide Pin
  3. 30° Multi-unit Abutment Non-Engaging including:
    4. Abutment Holder
    5. Jig Stabilizer (modified Impression Coping Open Tray Multi-unit)
    6. Abutment Screw

For more information on how to make the jig, see laboratory procedure on page 24.  
 For instructions on cleaning the jig, see page 17.





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### NobelGuide Surgical Template

The NobelGuide Surgical Template is made of a material that is sensitive to moisture and UV light. Therefore:

- Store the surgical template together with a moisture absorbent in the UV protective plastic bag in which it was delivered.
- Store the surgical template in a dry and dark location.
- Do not expose the surgical template to direct sunlight.
- Do not remove the moisture absorbent.

### Immediately before surgery

- Use a high level disinfectant (e.g. Betadine, Cidex OPA, Actril, chlorhexadine, alcohol or similar disinfectants according to manufacturer's instructions).
- Rinse thoroughly with sterile water. Dry quickly, but without using heat.
- Alternatively the template may be sterilized using Gamma irradiation.

**Warning:** The NobelGuide Surgical Template may deform if exposed to liquids (even water) for more than 30 minutes.



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### Acrylic jig

Disinfect the jig according to normal procedures for non-autoclavable products.



# Clinical procedure.

The images show immediate function with an all-acrylic bridge and NobelSpeedy Groovy RP implants in the maxilla. The same procedure also applies for the mandible.

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## 1 Place implants

- Place four implants according to the computer-based planning.
- Remove the surgical template.



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## 2 Connect straight Multi-unit Abutments

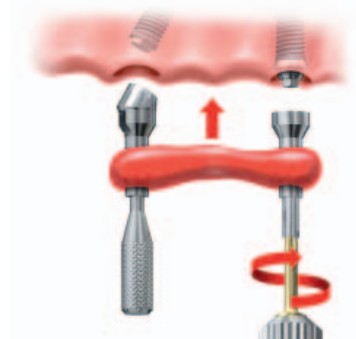
- If indicated use a Bone Mill to correctly seat the abutments.
- Place straight Multi-unit Abutments in the two anterior sites.
  
- Tighten to 35 Ncm using Screwdriver Machine Multi-unit and Manual Torque Wrench Prosthetic.



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## 3 Place jig to connect 30° Multi-unit Abutments

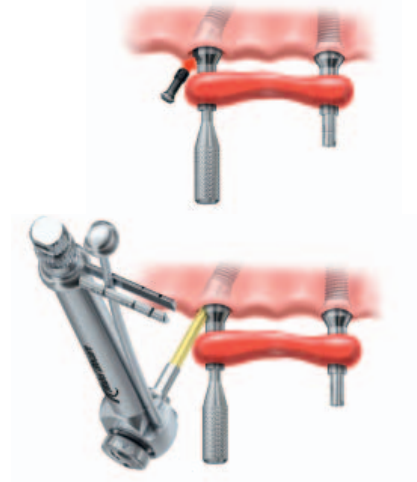
- Place the disinfected jig on the corresponding anterior abutment and posterior implant.
- Verify correct seating of the jig and tighten the guide pin to the anterior abutment.



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#### 4 Connect and tighten 30° Multi-unit Abutment

- Connect the 30° Multi-unit Abutment Non-Engaging and abutment screw using Unigrip Screwdriver.
- Tighten the abutment screw to 15 Ncm using Screwdriver Machine Unigrip and Manual Torque Wrench Prosthetic.

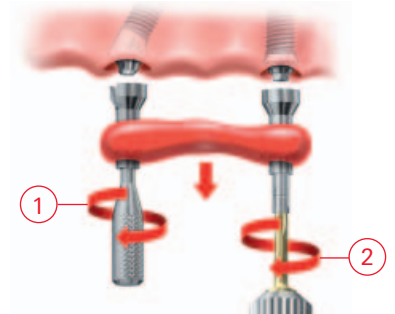



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#### 5 Disconnect jig

- Disconnect the jig by unscrewing the abutment holder (1) and guide pin (2).
- Repeat the entire procedure for the opposite side.

**Note:** Never unscrew the abutment holder connected to the 30° Multi-unit Abutment before tightening the posterior angled abutment.




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#### Option: delayed loading

If the required tightening torque for immediate function (minimum 35 Ncm) cannot be achieved or the treatment of choice is a delayed loading protocol, a conventional healing phase is recommended prior to delivery of a provisional or final restoration.

- Place cover screws on all four implants and suture the entrance to the implants or close the flap in case it was raised.
  - Wait with further steps until osseointegration has taken place.
-

---

## 7 Connect temporary copings

### Notes:

- The all-acrylic bridge is delivered with Temporary Copings Multi-unit Titanium in three implant positions. There is an extended hole located in one of the posterior positions.
- If the treatment team is not experienced with the procedure, it is recommended to leave two extended holes in the all-acrylic bridge.

- Place the Temporary Coping Multi-unit Titanium that is not yet connected to the prosthesis onto its corresponding Multi-unit Abutment and manually tighten using Unigrip Screwdriver.

- Connect the bridge using three prosthetic screws and manually tighten using Unigrip Screwdriver.
- Tighten all screws to 15Ncm using Unigrip Screwdriver Machine and Manual Torque Wrench Prosthetic.

- Use tooth-colored flowable composite or acrylic to secure the temporary coping to the bridge, making sure to keep the screw-access hole free from composite.



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### 8 Reinforce temporary coping

- Disconnect the bridge.
- Fill the gap between temporary coping and the bridge with self-curing acrylic.
- Adjust and polish.



---

### 9 Connect provisional bridge

- Place the all-acrylic bridge on the abutments.
- Tighten the prosthetic screws to 15Ncm using Unigrip Screwdriver Machine and Manual Torque Wrench Prosthetic.
- Block out screw access and fill holes with suitable material.
- Check the occlusion.



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### 10 Final restoration

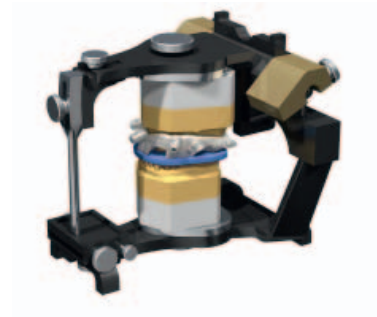
After adequate healing time, follow established prosthetic procedures for the final restoration, preferably using a NobelProcera Implant Bridge.

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# Laboratory procedure – fabrication of model and abutment connection.

## 1 Fabricate stone model and surgical index

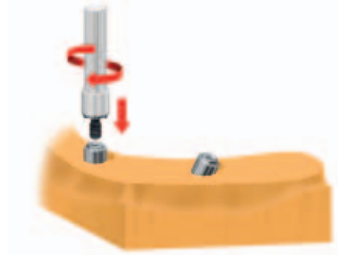
- Fabricate a stone model using the surgical template as described in the NobelGuide concept manual.
- Mount the model in the articulator using the radiographic guide.
- Replace the radiographic guide with the surgical template.
- Fabricate a surgical index towards the opposing dentition in the articulator.
- Put the surgical template back in the UV-protective plastic bag in which it was delivered.



## 2 Connect straight Multi-unit Abutment

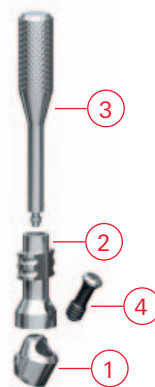
- Place the selected straight Multi-unit Abutment on the anterior implant replica. Remove the plastic holder.
- Tighten with Screwdriver Manual Multi-unit.

**Note:** Plastic Try-in Multi-unit Abutments are available to determine the ideal abutment collar height prior to ordering/opening the final Multi-unit Abutment package.



## 3 Place 30° Multi-unit Abutment Non-Engaging

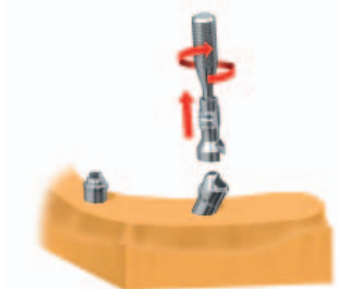
- Place a 30° Multi-unit Abutment Non-Engaging (1) including jig stabilizer (2, modified Impression Coping Open Tray Multi-unit), abutment holder (3) and abutment screw (4) on a posterior implant replica.
- Align the abutment holder with the long axis of the straight Multi-unit Abutment.
- Tighten the abutment screw with Unigrip Screwdriver Manual.



## 4 Disconnect jig stabilizer

- Disconnect the jig stabilizer by unscrewing the abutment holder.
- Repeat steps 2–4 for the opposite side.

**Note:** Once the abutments are tightened in their final position, do not loosen them until the jig is fabricated.

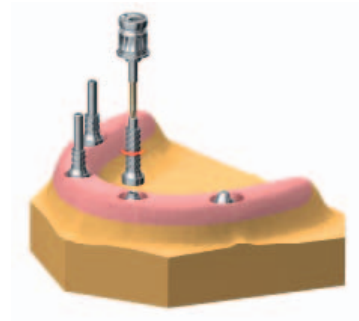


# Laboratory procedure – fabrication of all-acrylic bridge.

## 1 Place temporary copings

- Use guide pins or lab screws to place three Temporary Copings Multi-unit Titanium on the two anterior and on one of the posterior abutments.
- Adjust the copings if needed.

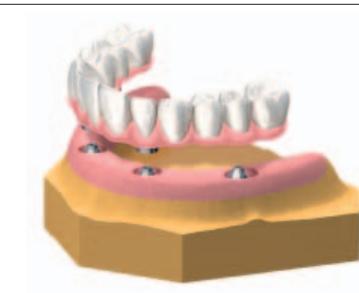
**Note:** If the treatment team is not experienced with the procedure, it is recommended to leave two extended holes in the all-acrylic bridge.



## 2 Fabricate all-acrylic bridge

- Fabricate an all-acrylic bridge using a high-density acrylic.
- Remember to reinforce the weak points of the prosthesis around the cylinders with more acrylic.

**Note:** If applicable, the provisional prosthesis can be made by converting the existing denture into a bridge.



## 3 Drill hole through bridge

Drill through the bridge where the fourth Temporary Coping Multi-unit Titanium will be positioned. Make sure that the hole is larger than the coping.



## 4 Try-in fourth temporary coping

Try-in the temporary coping and adjust if necessary.



# Laboratory procedure – fabrication of jig.

---

## 1 Place impression coping

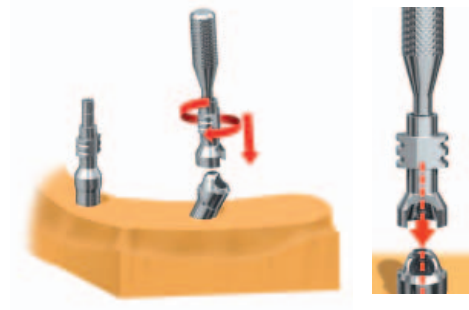
- Place an Impression Coping Open Tray Multi-unit on one of the straight Multi-unit Abutments.
- Tighten the guide pin using Unigrip Screwdriver Manual.



---

## 2 Reconnect jig stabilizer

- Reconnect jig stabilizer and abutment holder on the 30° Multi-unit Abutment Non-Engaging.
- Align the abutment screw access hole with the abutment screw.



---

## 3 Secure jig stabilizer

Use thin wire or dental floss to secure jig stabilizer and impression coping.



---

## 4 Apply acrylic

Use quick-setting acrylic to secure the wire/floss between jig stabilizer and the impression coping.

**Note:** Avoid putting acrylic on the abutments.





---

**5 Remove jig**

- Loosen, but do not remove, the guide pin from the straight Multi-unit Abutment.
- Loosen the abutment screw securing the 30° Multi-unit Abutment to the implant replica.
- Remove the jig from the stone model.

**Note:** All components must remain connected in the jig construction.



---

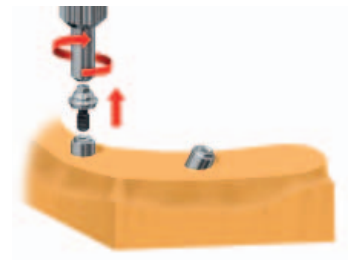
**6 Repeat procedure**

Repeat the procedure for the other two abutments.

---

**7 Disconnect straight Multi-unit Abutments**

- Disconnect the straight Multi-unit Abutments from the model using Screwdriver Manual Multi-unit.
- Mount the plastic holder back onto the abutment in order to facilitate abutment connection for the clinician.



---

**8 Send the following to the clinician**

- Stone model.
- Two jigs (marked 'Left' and 'Right') including angled Multi-unit Abutments.
- Two straight Multi-unit Abutments.
- Temporary bridge with three Temporary Copings Multi-unit cured within temporary restoration.
- One loose Temporary Coping Multi-unit.
- 4 prosthetic screws.
- Surgical template with verified fit on model.
- Surgical index.



# Final restorations.

It is recommended to use the highly esthetic and versatile NobelProcera Implant Bridge as final prosthetic reconstruction. Several veneering options are available, depending on patient needs and requirements:

**Basic: NobelProcera Implant Bridge with acrylic teeth and acrylic gingiva**

Acrylic teeth with acrylic gingiva applied over the NobelProcera titanium framework.

**Medium: NobelProcera Implant Bridge veneered with composite**

NobelProcera titanium framework veneered with composite for good esthetics and easy repair (both chair-side and in lab).

**Premium: NobelProcera Implant Bridge with individualized NobelProcera ceramic crowns**

Individual NobelProcera Crowns Alumina or Zirconia cemented to a NobelProcera Implant Bridge framework for excellent esthetics and strength.

For the prosthetic procedure, see NobelEsthetics procedures manual (for current version see section Resources on [www.nobelbiocare.com/dental](http://www.nobelbiocare.com/dental)).



Premium bridge for the maxilla



Basic bridge for the mandible



Intra-oral bite



Extra-oral smile

Case courtesy of MALO CLINIC Lisbon (Portugal) and CM Ceramics

# Multi-unit Abutments.

For multiple-unit, screw-retained restorations

Simplifies prosthetic access for diverging implant angles.

Abutments are delivered with handles to assist with seating.




















Designed to accommodate fully and partially edentulous arches, particularly when using the All-on-4 technique.


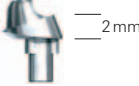










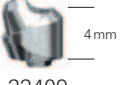





Available as straight and angled (17° and 30°), engaging and non-engaging\*, with a selection of collar heights.




















*\*For All-on-4 with guided surgery only.*

	<b>External hex connection</b> Brånemark System™ and NobelSpeedy™ Groovy 			<b>Internal conical connection</b> NobelActive™ 		<b>Internal tri-channel connection</b> NobelReplace™, Replace™ Select, NobelSpeedy™ Replace 				
	NP	RP	WP	NP	RP	NP	RP	WP	6.0	
Multi-unit Abutment 1 mm		 1mm	29184	-	-	 1mm	29196	29199	29204	-
Multi-unit Abutment 1.5 mm	-	-	-	34186	 1.5mm	34190	-	-	-	-
Multi-unit Abutment 2 mm		 2mm	29185	-	-	 2mm	29197	29200	29205	-
Multi-unit Abutment 2.5 mm	-	-	-	34187	 2.5mm	34191	-	-	-	-
Multi-unit Abutment 3 mm		 3mm	29186	-	-	 3mm	29198	29201	29206	-
Multi-unit Abutment 3.5 mm	-	-	-	34595	 3.5mm	34596	-	-	-	-
Multi-unit Abutment 4 mm	-	 4mm	29182	-	-	 4mm	-	29202	-	-
Multi-unit Abutment 4.5 mm	-	-	-	-	 4.5mm	35407	-	-	-	-
Multi-unit Abutment 5 mm	-	 5mm	29183	-	-	 5mm	-	29203	-	-

Abutment screw included.

	External hex connection Brånemark System™ and NobelSpeedy™ Groovy			Internal conical connection NobelActive™		Internal tri-channel connection NobelReplace™, Replace™ Select, NobelSpeedy™ Replace			6.0
	NP	RP	WP	NP	RP	NP	RP	WP	
17° Multi-unit Abutment 2mm									
	29187	29189	-	-	-	29235	29237	-	-
17° Multi-unit Abutment 2.5mm									
	-	-	-	34188	34192	-	-	-	-
17° Multi-unit Abutment 3mm									
	29188	29190	-	-	-	29236	29238	-	-
17° Multi-unit Abutment 3.5mm									
	-	-	-	34189	34193	-	-	-	-
17° Multi-unit Abutment 4mm									
	-	29191	-	-	-	-	29239	-	-
30° Multi-unit Abutment 3.5mm									
	-	-	-	34367	34369	-	-	-	-
30° Multi-unit Abutment 4mm									
	-	29192	-	-	-	-	29240	-	-
30° Multi-unit Abutment Non-Engaging 4mm (For All-on-4 with guided surgery)									
	-	33411	-	-	-	-	33409	-	-
30° Multi-unit Abutment 4.5mm									
	-	-	-	34368	34370	-	-	-	-
30° Multi-unit Abutment 5mm									
	-	29193	-	-	-	-	29241	-	-
30° Multi-unit Abutment Non-Engaging 5mm (For All-on-4 with guided surgery)									
	-	33412	-	-	-	-	33410	-	-

Abutment screw included.

	<b>External hex connection</b> Brånemark System™ and NobelSpeedy™ Groovy 			<b>Internal conical connection</b> NobelActive™ 		<b>Internal tri-channel connection</b> NobelReplace™, Replace™ Select, NobelSpeedy™ Replace 			
	NP	RP	WP	NP	RP	NP	RP	WP	6.0
Abutment Screw Multi-unit Angled	29194	 29195	–	–*	–*	29242	 29243	–	–
Prosthetic Screw Multi-unit	29285	 29285	29286	29285	 29285	29285	 29285	29285	–
Healing Cap Multi-unit (1/pkg)	4.1mm  31145	31145	29066	4.1mm  31145	31145	4.1mm  31145	31145	31145	–
Healing Cap Multi-unit (5/pkg)	4.1mm  29064	29064	–	4.1mm  29064	29064	4.1mm  29064	29064	29064	–
Healing Cap Wide Multi-unit (1/pkg)	4.1mm  31146	31146	29067	4.1mm  31146	31146	4.1mm  31146	31146	31146	–

**Torque guide for clinical screws for Nobel Biocare implant systems**

Straight Multi-unit Abutment	35Ncm
17° and 30° Multi-unit Abutment	15Ncm
Prosthetic screw	15Ncm

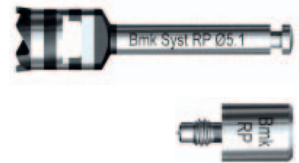
\* Abutment screw is delivered together with abutment and cannot be ordered separately.

# Surgical components.

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## Bone Mills and Guides Brånemark System™

Bone Mill with Guide NP Ø 4.5mm	33392
Bone Mill with Guide RP Ø 5.1mm	33393
Bone Mill with Guide WP Ø 6.5mm	33495
Bone Mill Guide NP	33496
Bone Mill Guide RP	33497
Bone Mill Guide WP	33498




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## Bone Mills and Guides NobelActive™

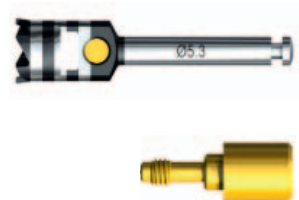
Bone Mill with Guide NP	34777
Bone Mill with Guide RP	34779
Bone Mill Guide NP	34778
Bone Mill Guide RP	34780




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## Bone Mills and Guides NobelReplace™

Bone Mill with Guide NP Ø 4.6mm	33501
Bone Mill with Guide RP Ø 5.3mm	33502
Bone Mill with Guide WP Ø 6.5mm	33504
Bone Mill with Guide 6.0 Ø 7.0mm	33505
Bone Mill Guide NP	33506
Bone Mill Guide RP	33507
Bone Mill Guide WP	33508
Bone Mill Guide 6.0	33509




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All-on-4 Guide	32068
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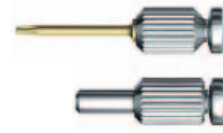
## Prosthetic Kit 32309

Kit includes:	
Prosthetic Kit Box	32322
Screwdriver Machine Unigrip 20 mm	29151
Screwdriver Machine Unigrip 30 mm	29153
Screwdriver Machine Multi-unit 21 mm	29158
Manual Torque Wrench Prosthetic	29165



**Screwdrivers**

Screwdriver Manual Unigrip 36 mm	29150
Screwdriver Manual Multi-unit 25 mm	29156



**External hex connection**  
Brånemark System™ and NobelSpeedy™ Groovy



**Internal conical connection**  
NobelActive™



**Internal tri-channel connection**  
NobelReplace™, Replace™ Select, NobelSpeedy™ Replace



	NP	RP	WP	NP	RP	NP	RP	WP	6.0
Impression Coping Open Tray Multi-unit (includes 15 mm Guide Pin)									
	29089*	29089*	29091**	29089	29089	29089	29089	29089	-



# Laboratory components.

**External hex connection**  
Brånemark System™ and NobelSpeedy™ Groovy
























**Internal conical connection**  
NobelActive™



**Internal tri-channel connection**  
NobelReplace™, Replace™  
Select, NobelSpeedy™ Replace



	External hex connection			Internal conical connection		Internal tri-channel connection			6.0
	NP	RP	WP	NP	RP	NP	RP	WP	
Temporary Coping Multi-unit Titanium (with Prosthetic Screw)	29046	 29046	29047	29046	 29046	29046	 29046	29046	-
Abutment Replica Multi-unit (1/pkg)	31161	 31161	31162	31161	 31161	31161	 31161	31161	-
Abutment Replica Multi-unit (5/pkg)	29110	 29110	-	29110	 29110	29110	 29110	29110	-
Guide Pin Multi-unit 10mm (1/pkg)	31154	 31154	31156	31154	 31154	31154	 31154	31154	-
Guide Pin Multi-unit 10mm (5/pkg)	29102	 29102	-	29102	 29102	29102	 29102	29102	-
Guide Pin Multi-unit 20mm (1/pkg)	31155	 31155	31157	31155	 31155	31155	 31155	31155	-
Guide Pin Multi-unit 20mm (5/pkg)	29103	 29103	-	29103	 29103	29103	 29103	29103	-

**External hex connection**  
Brånemark System™ and NobelSpeedy™ Groovy



**Internal conical connection**  
NobelActive™



**Internal tri-channel connection**  
NobelReplace™, Replace™  
Select, NobelSpeedy™ Replace



	External hex connection			Internal conical connection		Internal tri-channel connection			6.0
	NP	RP	WP	NP	RP	NP	RP	WP	
Lab Screw Multi-unit (1/pkg)	-	-	 31163	-	-	-	-	-	-
Lab Screw Multi-unit (5/pkg)	29287	 29287	-	29287	 29287	29287	 29287	29287	-
Lab Screw Multi-unit Angled (1/pkg)	31164	 31165	-	31164	 31165	31166	 31167	-	-

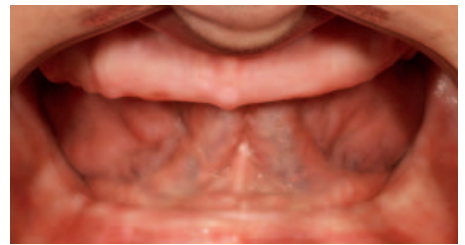
# Clinical cases.

## Efficient treatment with NobelSpeedy

44-year old edentulous female patient requests a fixed restoration due to inadequate function, comfort and esthetics of the existing removable denture.

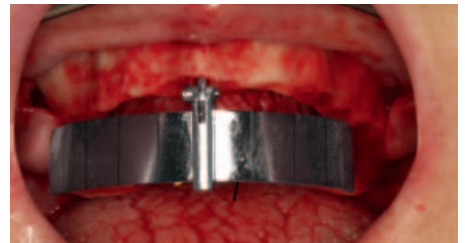
### Diagnosis

Limited bone volume in the posterior and a need for bone crest level optimization.



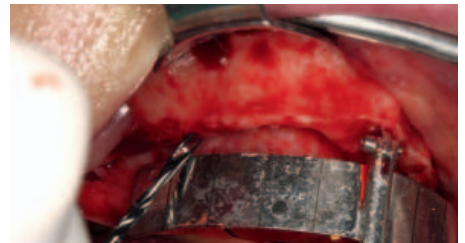
### Preparation

A conventional flap procedure is performed, the bone crest level optimized and the All-on-4 Guide anchored.



### Implant site preparation

Implant site preparation according to the drilling protocol for straight implants using the All-on-4 Guide. The vertical lines on the guide are used as reference for drilling at an angle of 45°.



### Implant insertion

Insertion of NobelSpeedy Groovy implants with external hex connection.



### Provisional prosthesis

Immediate loading of the implants with fixed provisional prosthesis based on an impression taken straight after surgery.



## Achieving predictable results with NobelGuide

---

### Indication

63-year old edentulous female patient requests a fixed restoration. The transition zone is completely hidden above the smile line.



---

### Chairside diagnosis

All-on-4 using NobelGuide is chosen using a minimally invasive flapless approach (adequate mouth opening is possible).



---

### Preparation

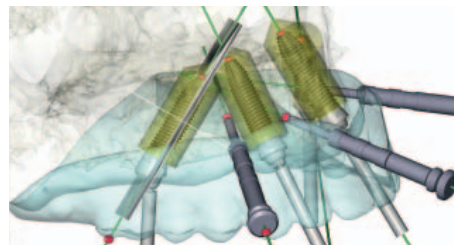
The existing removable denture represents the intended tooth setup and is transformed into a radiographic guide (gutta percha markers). A bite index is created to ensure correct anatomical positioning of the guide during CT scanning.



---

### Treatment planning

Based on 3D CT diagnostic imaging of patient and radiographic guide, the four implants are placed virtually in the NobelClinician Software, optimizing position, angulation and distribution.



---

### Implant site preparation

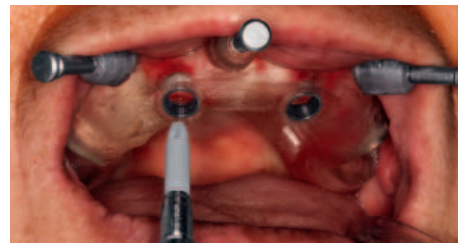
After careful installation of the ready-to-use surgical template and soft tissue punching, guided drilling for the first anterior implant is performed according to the NobelGuide drill protocol for NobelSpeedy implants.



---

**Implant insertion**

The first anterior NobelSpeedy Groovy implant is inserted into the prepared site. After proper seating, the second anterior implant site gets prepared and the implant inserted. Preparation and insertion of the distal implants is only performed after full seating of the two anterior implants.



---

**Minimally invasive surgery**

If a flapless procedure is chosen, trauma to tissue is minimized. This image shows the maxillary arch immediately after implant insertion.



---

**Provisional prosthesis**

A fixed prosthesis fabricated prior to surgery is finalized in the patient's mouth and secured with four prosthetic screws (with Multi-unit Abutments installed on the implants and Temporary Copings Multi-unit within the prosthesis).



---

**Immediate function**

As immediate function is part of the treatment plan, the patient benefits from a fixed, screw-retained prosthesis immediately after surgery.



---

**Final restoration**

After adequate healing time, a final NobelProcera Implant Bridge is fabricated based on a new impression.





# Customer service worldwide.

## Europe and Russia

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